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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/723,406

11/28/2000

Takahiro Akatsuka

FUSA 18.026

6277

26304

7590

03/29/2004

KATTEN MUCHIN ZAVIS ROSENMAN
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EXAMINER

MILLS, DONALD L

ART UNIT

PAPER NUMBER

2662

DATE MAILED 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



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09/723,406	11/28/2000	Takahiro Akatsuka	FUSA 18.026	6277

7590 03/15/2004
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EXAMINER

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Office Action Summary

Application No.

09/723,406

Applicant(s)

AKATSUKA ET AL

Examiner

Donald L Mills

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2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the claim specifies *estimating the timing of receiving a frame from other terminals on the basis of said timing information* (See claim 1, lines 6-7.) The specification describes *all other terminals in the same segment reserve the next frame transmitting timing information NFT* (See page 10, lines 23-25,) however, an estimation process is not described. Furthermore, the terminals in the same segment reserve timing for a *next frame* not the *frame*. For the purpose of this examination, the examiner will interpret this as *reserving the timing of receiving a next frame from other terminals on the basis of said timing information*.

Regarding claim 2, the claim specifies *prohibiting a frame from being transmitted from said each terminal at the reserved timing*. The specification describes *all the other terminals 2, 3 in the same segment reserve the next frame transmitting timing information* (See page 10, lines 23-25,) the specification does not describe preventing every terminal from transmitting only the terminals whom have not reserved timing.

Regarding claim 9, the claim specifies *using the extracted timing as a timing of receiving said frame from said other terminal* (See claim 9, lines 11-12.) The specification describes *all*

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the other terminals 2, 3 in the same segment reserve the next frame transmitting timing information (See page 10, lines 23-25,) the specification does not describe reserving time for the frame only the next frame.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Raychaudhuri (4,774,707).

Regarding claim 1, Raychaudhuri discloses a random access communication system with scheduled data transmission, which comprises:

Adding timing information as to the timing of transmitting a next frame from each terminal to a frame when said frame is transmitted from said each terminal onto a shared transmission line (Referring to Figure 1, the reservation request packet formed by a transmitter-receiver includes information relative to D_i , the length of the data packet for which transmission or channel time is to be reserved, which is transmitted over a common frequency. See column 6, lines 61-64.)

Estimating the timing of receiving a frame from other terminals on the basis of said timing information by said each terminal which is connected to said shared transmission line (Referring to Figure 1, all transmitter-receivers reserve time for transmission of the message data

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packet to be transmitted, inherently corresponding to the time for receiving the entire packet.

See column 7, lines 17-21.)

Regarding claim 2, Raychaudhuri discloses *reserving the estimated timing by said each terminal; and prohibiting a frame from being transmitted from said each terminal at the reserved timing* (Referring to Figure 1, all transmitter-receivers reserve time for transmission of the message data packet to be transmitted, by inhibiting their own transmitter for the particular reserved time. See column 7, lines 17-22.)

Regarding claim 3, Raychaudhuri discloses *wherein said timing information for the next frame is disposed at the front portion of a preamble which is added to said frame and transmitted onto the shared transmission line* (Referring to Figure 1, the reservation request packet formed by a transmitter-receiver includes information relative to D_i , the length of the data packet for which transmission or channel time is to be reserved, inherently part of the frame and corresponding to the beginning of the reservation frame for transmission over the common frequency. See column 6, lines 61-64.)

Regarding claim 4, Raychaudhuri discloses *wherein when said network is a network in which data short of a prescribed size is transmitted with a carrier extension added thereto to satisfy said prescribed size, said timing information for the next frame is inserted into said carrier extension* (Referring to Figure 1, the reservation request packet formed by a transmitter-receiver includes information relative to D_i , the length of the data packet for which transmission or channel time is to be reserved, inherently part of the frame of a set size satisfying the prescribed size. See column 6, lines 61-64.)

Regarding claim 6, Raychaudhuri discloses:

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Providing a timing reservation management table in each terminal (Referring to Figure 3b, all transmitter-receivers of the system know that they must reserve time **T20-T26**, inherently requiring the storing of time reservation. See column 8, lines 37-38.)

Reserving both said timing for receiving a frame from other terminals, and timing for transmitting a next frame from said each terminal in said table (Referring to Figure 3b, all transmitter-receivers other than the one transmitting message packet **318** are inhibited from transmission in the interval **T12-T16**, inherently requiring reserving and storing both reception and transmission timing. See column 8, lines 57-60.)

Transmitting a next frame onto said shared transmission line when said timing of transmitting said next frame from said each terminal comes (Referring to Figure 3a, following time **T16** at which completion of transmission of data packet **318** was accomplished the transmitter-receiver receives a further message to be transmitted and transmits a further reservation request packet. See column 9, lines 11-15.)

Regarding claim 9, Raychaudhuri discloses a random access communication system with scheduled data transmission, which comprises:

A transmitting timing information adding portion for adding timing information as to the timing of transmitting a next frame to a frame whereby said frame is transmitted onto a shared transmission line (Referring to Figure 1, the reservation request packet formed by a transmitter-receiver includes information relative to D_i , the length of the data packet for which transmission or channel time is to be reserved, which is transmitted over a common frequency. See column 6, lines 61-64.)

A timing extractor for extracting said timing information from a frame which is transmitted onto said shared transmission line from other terminal, and using the extracted timing as a timing of receiving said frame from said other terminal (Referring to Figure 1, all transmitter-receivers reserve time for transmission of the message data packet to be transmitted, inherently corresponding to the time for receiving the entire packet as indicated when D_i is read from the reservation packet. See column 7, lines 17-21.)

A timing reservation management table for reserving a timing of transmitting a next frame from its own terminal and a timing of receiving a frame from other terminal (Referring to Figure 3b, all transmitter-receivers of the system know that they must reserve time **T20-T26**, inherently requiring the storing of time reservation. See column 8, lines 37-38.)

A timing controller for prohibiting a frame from being transmitted from its own terminal at said timing of receiving a frame from other terminal, while allowing a frame to be transmitted from its own terminal onto said transmission line when said timing of transmitting a next frame comes by reference to said timing reservation management table (Referring to Figure 1, all transmitter-receivers reserve time for transmission of the message data packet to be transmitted, by inhibiting their own transmitter for the particular reserved time, inherently allowing transmission when the transmitter-receiver has reserved a period for transmission corresponding to the stored time reservation. See column 7, lines 17-22.)

Regarding claim 10, Raychaudhuri discloses:

A buffer controller for queuing packets to be transmitted and outputting a predetermined packet when the transmission of said packet is instructed by said timing controller (Referring to Figure 2, input buffer **220** receives the data and stores it until receipt of a READY signal

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produced by a message data packet buffer **222**. Upon receipt of the READY signal, buffer **220** applies data to message data packet buffer **222**, inherently based upon the system timing reference. See column 5, lines 58-62.)

A frame assembler for assembling said packet into a frame (Referring to Figure 1, each transmitter-receiver by means of its counter **224** determines the length of the data packet to be transmitted, and forms a reservation request packet. See column 6, lines 58-60.)

Wherein said transmitting timing information adding portion adds said timing information for the next frame to said frame which is output from said frame assembler (Referring to Figure 1, the reservation request packet formed by a transmitter-receiver includes information relative to D_i , the length of the data packet for which transmission or channel time is to be reserved, inherently for the next data frame. See column 6, lines 61-64.)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raychaudhuri (4,774,707) in view of Prieto, Jr. et al. (US 6,381,228 B1), hereinafter referred to as Prieto.

Regarding claim 5 as explained above in the rejection statement of claim 1, Raychaudhuri discloses all of the claim limitations of claim 1 (parent claim.) Raychaudhuri does not disclose

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dividing data into a former data having a prescribed size and a latter data when the size of said data is larger than said prescribed size; determining said timing information for a latter frame containing said latter data on the basis of the time required for transmitting a former frame containing said former data; and regarding said latter frame as a next frame and adding said timing information for said latter frame to said former frame.

Prieto teaches that when the local UET requires more bandwidth resources than was originally requested, it may piggyback a request message to the controller as part of the data stream that has already been allocated. Further, the UET transmits the RQM as part of the reserved data transfer to reserve a future available non-contentious reservation time slot (See column 7, lines 18-25.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Prieto in the system of Raychaudhuri. One of ordinary skill in the art would have been motivated to do so in order to allow multiple bursty users to efficiently use the common uplink transmission resource as taught by Prieto (See column 2, lines 54-57.)

Regarding claim 11 as explained above in the rejection statement of claim 9, Raychaudhuri discloses all of the claim limitations of claim 1 (parent claim.) Raychaudhuri does not disclose *wherein said buffer controller divides a packet to be transmitted into a former packet having a prescribed size and a latter packet when the size of said packet is larger than said prescribed size, and queues said former and latter packets, and said transmitting timing information adding portion determines said timing information for a latter frame which is assembled by using said latter packet, on the basis of the time required for transmitting a former*

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frame which is assembled by using said former packet, and regards the latter frame as a next frame and adds the determined timing information to the former frame.

Prieto teaches that when the local UET requires more bandwidth resources than was originally requested, it may piggyback a request message to the controller as part of the data stream that has already been allocated. Further, the UET transmits the RQM as part of the reserved data transfer to reserve a future available non-contentious reservation time slot (See column 7, lines 18-25.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Prieto in the system of Raychaudhuri. One of ordinary skill in the art would have been motivated to do so in order to allow multiple bursty users to efficiently use the common uplink transmission resource as taught by Prieto (See column 2, lines 54-57.)

7. Claims 7, 8, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raychaudhuri (4,774,707).

Regarding claims 7 and 12 as explained above in the rejection statement of claims 1 and 9; Raychaudhuri discloses all of the claim limitations of claims 1 and 9 (parent claims.) Raychaudhuri further discloses *providing a timer which increments at certain intervals of time in each terminal (Claim 7)/a timer which increments at certain intervals of time (Claim 12)* (Referring to Figure 1, each earth station inherently possess a timer in order to process signals. See column 5, lines 7-10.) And, *recording one selected from the group consisting of 'frame transmission by other terminals', 'frame transmission by its own terminal' and 'vacant' at the*

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storage portion of said timing reservation management table (Claims 7 and 12) (Referring to Figure 3b, all transmitter-receivers other than the one transmitting message packet 318 are inhibited from transmission in the interval T12-T16, inherently requiring reserving and storing both reception and transmission timing as well indicating vacancy. See column 8, lines 57-60.) Raychaudhuri does not disclose *using (Claim 7)/a table management portion for using the time measured by said timer as an address (Claims 12).*

Raychaudhuri teaches a method for random access contention communication among a plurality of transmitter-receivers by way of a transmission path utilizing reservation request packets (See column 3, lines 32-40.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement time measurements as addresses in the system of Raychaudhuri. One of ordinary skill in the art would have been motivated to do so in order to chart the availability of the channel. In addition, in so doing unexpected results are not produced.

Regarding claim 8 as explained above in the rejection statement of claim 1, Raychaudhuri discloses all of the claim limitations of claim 1 (parent claim.) Raychaudhuri does not disclose *changing the unit of said increment of said timer in accordance with the type of said network.*

Raychaudhuri teaches a method for random access contention communication among a plurality of transmitter-receivers by way of a transmission path utilizing reservation request packets (See column 3, lines 32-40.) Raychaudhuri further teaches earth stations, inherently possessing a timer in order to process signals (See column 5, lines 7-10.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a different increment of timing for a different network in the method of

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Raychaudhuri. One of ordinary skill in the art would have been motivated to do so in order to adapt to different satellite networks. In addition, in so doing unexpected results are not produced.

Regarding claim 13 as explained above in the rejection statement of claim 9, Raychaudhuri discloses all of the claim limitations of claim 9 (parent claim.) Raychaudhuri does not disclose *a means for detecting the transmission speed of said transmission line and a means for determining the unit of increment of said timer on the basis of said transmission speed.*

Raychaudhuri teaches a method for random access contention communication among a plurality of transmitter-receivers by way of a transmission path utilizing reservation request packets (See column 3, lines 32-40.) Raychaudhuri further teaches earth stations, inherently possessing a timer in order to process signals (See column 5, lines 7-10.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a different increment of timing based upon the measured rate for a different network in the method of Raychaudhuri. One of ordinary skill in the art would have been motivated to do so in order to adapt to different satellite networks utilizing different transmission rates. In addition, in so doing unexpected results are not produced.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L Mills whose telephone number is 703-305-7869. The examiner can normally be reached on 8:00 AM to 4:30 PM.

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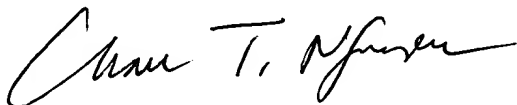
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donald L Mills



March 6, 2004



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SUPERVISORY PATENT EXAMINER
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